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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,270	06/30/2004	Po-Ching Lin	12813-US-PA	4269

31561 7590 02/14/2008

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER	
SLOMSKI, REBECCA	
ART UNIT	PAPER NUMBER
2877	

NOTIFICATION DATE	DELIVERY MODE
02/14/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USA@JCIPGROUP.COM.TW

Office Action Summary	Application No.	Applicant(s)	
	10/710,270	LIN ET AL.	
	Examiner	Art Unit	
	REBECCA C. SLOMSKI	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *16-20* is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 June 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim **4** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The limitation "beam monitoring device for monitoring collimation of at least one of the two light beams passing through the two holes" lacks description as to how to monitor the collimation of the beam(s) as it only describes the use of a mirror and the presence of a positioning board (best described in P.0021).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims **9, 10** and **14** are rejected under 35 U.S.C. 102(b) as being anticipated by Roecks et al. U.S. Patent #4,286,201.

1. With respect to claim **9**, Roecks et al. discloses an automatic part positioning system comprising:

    - A signal generating unit disposed on one of two objects to be positioned (Figure 1, light beam generator 25 = signal generating unit and object 1)
    - A positioning unit disposed on the other of the two objects to be positioned (Figure 1, circuit board 15 = positioning unit, circuit frame 19 = object 2)
    - Wherein the signal generating unit has two positioning points thereon capable of emitting two light beams to the positioning board (Figure 3 = signal generator 25 from Figure 1, light beams 23 and 23')
    - The positioning unit has two holes at two specific positions and each of the two light beams can pass through the two holes in a specific direction when the two objects are aligned with each other (Figure 1, hole 17, Figure 7, holes 17' and 17", Col.6, L 14-21)

2. With respect to claim **10**, Roecks et al. discloses all of the limitations as applied to claim 9 above. In addition, Roecks et al. discloses:

    - The positioning unit has a planar top surface and the two light beams pass through the two holes perpendicular to the planar top surface when the two objects are aligned with each other (Figure 1, Col.5, L 61-64)

3. With respect to claim **14**, Roecks et al. discloses all of the limitations as applied to claims 9 and 10 above. In addition, Roecks et al. discloses:

    - The positioning unit further includes at least one beam monitoring device for monitoring a direction of at least one of the two light beams passing through the two holes (Figure 1, light beam detector 27)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims **1-4, 7-11, 13** and **14** are rejected under 35 U.S.C. 103(a) as being obvious over Huang et al. U.S. Publication 2002/0197136.

1. With respect to claim **1**, Huang et al. discloses an apparatus for aligning the loading/unload of a wafer cassette to/from a loadport comprising:

    - A signal emitting unit disposed on one of the load port (Figure 7, loadport 68, laser beam projectors 74)
    - A positioning board disposed on the transport system (Figure 7, transport system = rail 64, positioning board = bottom surface 82)

- Wherein the signal emitting unit has two positioning points thereon capable of emitting two light beams to the positioning board (Figure 7, laser beam projectors 74)
- The positioning board has two holes at two positions corresponding to the two positioning points, such that the two holes are vertically aligned with the two positioning points when the positioning board is horizontal and is aligned with the load port (Figure 7, holes = detectors 80, P.0037)
- The two light beams can pass through the two holes perpendicular to the positioning board in a horizontal state when the load port is aligned with the transport system (Figure 7, P.0037)

Huang et al. fails to specifically disclose holes in the positioning board. Huang et al. discloses a board with detectors located within the bottom surface. It would have been obvious to one of ordinary skill in the art to have holes in the bottom surface in order for the signal to arrive at the detectors.

2. With respect to claim **2**, Huang et al. discloses all of the limitations as applied to claim 1 above. In addition, Huang et al. discloses:

- The two light beams comprise two laser beams (P.0033)

3. With respect to claim **3**, Huang et al. discloses all of the limitations as applied to claim 1 above. However, Huang et al. fails to disclose the positioning board has coordination axes thereon passing the two holes.

It would have been obvious to one of ordinary skill in the art at the time the invention was conceived to use coordinate axes on the surface where the detectors are located in Huang et al. since Huang et al. uses a CCD array, wherein it would be possible to determine the exact locations of the laser beams, but a coordinate axes would perform the same function at a lower cost.

4. With respect to claim **4**, Huang et al. discloses all of the limitations as applied to claim 1 above. In addition, Huang et al. discloses:

- The positioning board further includes at least one beam monitoring device for monitoring the collimation of at least one of the two light beams passing through the two holes (detectors 80, P.0035)

The limitation "for monitoring the collimation…" has been considered but does not hold patentable weight because it has been held that the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987)

5. With respect claim **7**, Huang et al. discloses all of the limitations as applied to claim 1 above. However, Huang et al. fails to disclose the positioning board is disposed below the signal emitting unit.

It would have been an obvious matter of design choice to one of ordinary skill in the art that the positioning board could be disposed below the signal emitting unit as in the current application rather than the signal emitting unit below the positioning board as in the Huang et al. since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

6. With respect to claim **8**, Huang et al. discloses all of the limitations as applied to claim 1 above. In addition, Huang et al. discloses:

- The signal emitting unit is a front opening unified pod (FOUP) for positioning disposed on the transport system (Figure 9, P.0008, FOUP located on loadport 68, located on rail 64 = transport system)
- The signal emitting unit emits the two light beams from a top of thereof to the positioning board disposed above the signal emitting unit (Figure 7)

However, Huang et al. fails to disclose the signal emitting unit emits the light beams from a bottom to the positioning board disposed below the signal emitting unit.

It would have been an obvious matter of design choice to one of ordinary skill in the art that the positioning board could be disposed below the signal emitting unit as in the

current application rather than the signal emitting unit below the positioning board as in the Huang et al. since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

7. With respect to claim 9, Huang et al. discloses an apparatus for aligning the loading/unload of a wafer cassette to/from a loadport comprising:

- A signal generating unit disposed on one of two objects to be positioned (Figure 7, loadport 68, laser beam projectors 74)
- A positioning unit disposed on the other of the two objects to be positioned (Figure 7, transport system = rail 64, positioning board = bottom surface 82)
- Wherein the signal emitting unit has two positioning points thereon capable of emitting two light beams to the positioning unit (Figure 7, laser beam projectors 74)
- The positioning unit has two holes at two specific positions each of the two light beams can pass through one of the two holes in a specific direction when the two objects are aligned with each other (Figure 7, holes = detectors 80, P.0037)

Huang et al. fails to specifically disclose holes in the positioning board. Huang et al. discloses a board with detectors located within the bottom surface. It would have

been obvious to one of ordinary skill in the art to have holes in the bottom surface in order for the signal to arrive at the detectors.

4. With respect to claim **10**, Huang et al. discloses all of the limitations as applied to claim 9 above. In addition, Huang et al. discloses:

    - The positioning unit has a planar top surface and the two light beams pass through the two holes perpendicular to the planar top surface when the two objects are aligned with each other (Figure 7)

5. With respect to claim **11**, Huang et al. discloses all of the limitations as applied to claims 9 and 10 above. However, Huang et al. fails to disclose the positioning board has coordination axes thereon passing the two holes.

    It would have been obvious to one of ordinary skill in the art at the time the invention was conceived to use coordinate axes on the surface where the detectors are located in Huang et al. since Huang et al. uses a CCD array, wherein it would be possible to determine the exact locations of the laser beams, but a coordinate axes would perform the same function at a lower cost.

6. With respect to claim **13**, Huang et al. discloses all of the limitations as applied to claims 9 and 10 above. In addition, Huang et al. discloses:

    - The two light beams comprise two laser beams (P.0033)

7. With respect to claim **14**, Huang et al. discloses all of the limitations as applied to claims 9 and 10 above. In addition, Huang et al. discloses:

    - The positioning unit further includes at least one beam monitoring device for monitoring a direction of at least one of the two light beams passing through the two holes (Figure 7, CCD array 80, P.0037)

Claims **5** and **15** are rejected under 35 U.S.C. 103(a) as being obvious over Huang et al. U.S. Publication 2002/0197136 in view of Oosawa et al. U.S. Patent #5,340,261.

8. With respect to claims **5** and **15**, Huang et al. discloses the limitations as applied to claims 1, 4, 9 and 14 above. However, Huang et al. fails to disclose the beam monitoring device includes a light projection board and a reflecting mirror.

Oosawa et al. discloses a load-lock unit and wafer transfer system comprising:

- A beam monitoring device includes a light projection board and a reflecting mirror, while the light beam is reflected to the light projection board via the reflecting mirror (Figure 3, mirror 8f, light projection board = light receiving section 8d)

It would have been obvious to one of ordinary skill in the art at the time the invention was conceived to use the mirror and projection board set up as in Oosawa et al. in the alignment apparatus of Huang et al. since the mirror allows more

flexibility in the placement of the detectors, thereby making the system more applicable to various set ups.

Claims **6** and **12** are rejected under 35 U.S.C. 103(a) as being obvious over Huang et al. U.S. Publication 2002/0197136 in view of Beckhart et al. U.S. Patent #6,307,211.

9. With respect to claims **6** and **12**, Huang et al. discloses the limitations as applied to claims 1, 4, 9 and 14 above. However, Huang et al. fails to disclose a leveler.

Beckhart et al. discloses a semiconductor alignment tool comprising:

- A positioning board includes a leveler (Col.3, L 9-12)

It would have been obvious to one of ordinary skill in the art at the time the invention was conceived to the leveler of Beckhart et al. in the alignment apparatus of Huang et al. since visual alignments are difficult time consuming and inaccurate and the leveler overcomes these issues. (Beckhart et al. Col.1, L 41-46)

Allowable Subject Matter

Claims **16-20** are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

- With respect to claim 16, the prior art taken alone or in combination fails to disclose or render obvious obtaining a translational deviation and a rotational deviation of the load port based on the light spots on the positioning board in combination with the rest of the limitations.

Citation

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- DeGeorge et al. U.S. Patent # 7,099,009 discloses an automated material handling laser alignment tool
- Lin et al. U.S. Patent #6,541,787 discloses an optically aligning loadport
- Seailles U.S. Patent # 3,584,960 discloses an apparatus for the positioning of two planes
- Maeda et al. U.S. Patent #5,876,884 discloses an alignment method for flat screen display devices

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to REBECCA C. SLOMSKI whose telephone number is (571)272-9787. The examiner can normally be reached on Monday through Thursday, 7:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on 571-272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rebecca C Slomski/
Examiner, Art Unit 2877

/L. G. Lauchman/
Primary Examiner, Art Unit 2877